

## SEQUENCE LISTING

<110> Bertin, John

<120> NOVEL MOLECULES OF THE CARD-RELATED  
PROTEIN FAMILY AND USES THEREOF

<130> 07334-076001

<140> 09/099,041

<141> 1998-06-17

<150> 09/019,942

<151> 1998-02-06

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<212> DNA

<213> Homo sapiens

<220>

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aggggcgtat ctgggcgcct gagecggggc tgggagcctt gggagccgcc gcagcagggg      180
gcacacccgg aaccggcctg agcgcccggg acc atg aac ggg gag gcc atc tgc      234
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agc gcc ctg ccc acc att ccc tac cac aaa ctc gcc gac ctg cgc tac      282
Ser Ala Leu Pro Thr Ile Pro Tyr His Lys Leu Ala Asp Leu Arg Tyr
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Leu Ser Arg Gly Ala Ser Gly Thr Val Ser Ser Ala Arg His Ala Asp
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tgg cgc gtc cag gtg gcc gtg aag cac ctg cac atc cac act ccg ctg      378
Trp Arg Val Gln Val Ala Val Lys His Leu His Ile His Thr Pro Leu
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ctc gac agt gaa aga aag gat gtc tta aga gaa gct gaa att tta cac      426
Leu Asp Ser Glu Arg Lys Asp Val Leu Arg Glu Ala Glu Ile Leu His
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aaa gct aga ttt agt tac att ctt cca att ttg gga att tgc aat gag      474
Lys Ala Arg Phe Ser Tyr Ile Leu Pro Ile Leu Gly Ile Cys Asn Glu
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aat gaa ctc cta cat agg aaa act gaa tat cct gat gtt gct tgg cca	570
Asn Glu Leu Leu His Arg Lys Thr Glu Tyr Pro Asp Val Ala Trp Pro	
105 110 115	
ttg aga ttt cgc atc ctg cat gaa att gcc ctt ggt gta aat tac ctg	618
Leu Arg Phe Arg Ile Leu His Glu Ile Ala Leu Gly Val Asn Tyr Leu	
120 125 130 135	
cac aat atg act cct cct tta ctt cat cat gac ttg aag act cag aat	666
His Asn Met Thr Pro Pro Leu Leu His His Asp Leu Lys Thr Gln Asn	
140 145 150	
atc tta ttg gac aat gaa ttt cat gtt aag att gca gat ttt ggt tta	714
Ile Leu Leu Asp Asn Glu Phe His Val Lys Ile Ala Asp Phe Gly Leu	
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Ser Lys Trp Arg Met Met Ser Leu Ser Gln Ser Arg Ser Ser Lys Ser	
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gca cca gaa gga ggg aca att atc tat atg cca cct gaa aac tat gaa	810
Ala Pro Glu Gly Gly Thr Ile Ile Tyr Met Pro Pro Glu Asn Tyr Glu	
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Pro Gly Gln Lys Ser Arg Ala Ser Ile Lys His Asp Ile Tyr Ser Tyr	
200 205 210 215	
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Ala Val Ile Thr Trp Glu Val Leu Ser Arg Lys Gln Pro Phe Glu Asp	
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gtc acc aat cct ttg cag ata atg tat agt gtg tca caa gga cat cga	954
Val Thr Asn Pro Leu Gln Ile Met Tyr Ser Val Ser Gln Gly His Arg	
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cct gtt att aat gaa gaa agt ttg cca tat gat ata cct cac cga gca	1002
Pro Val Ile Asn Glu Glu Ser Leu Pro Tyr Asp Ile Pro His Arg Ala	
250 255 260	
cgt atg atc tct cta ata gaa agt gga tgg gca caa aat cca gat gaa	1050
Arg Met Ile Ser Leu Ile Glu Ser Gly Trp Ala Gln Asn Pro Asp Glu	
265 270 275	
aga cca tct ttc tta aaa tgt tta ata gaa ctt gaa cca gtt ttg aga	1098
Arg Pro Ser Phe Leu Lys Cys Leu Ile Glu Leu Glu Pro Val Leu Arg	
280 285 290 295	
aca ttt gaa gag ata act ttt ctt gaa gct gtt att cag cta aag aaa	1146
Thr Phe Glu Glu Ile Thr Phe Leu Glu Ala Val Ile Gln Leu Lys Lys	
300 305 310	
aca aag tta cag agt gtt tca agt gcc att cac cta tgt gac aag aag	1194

Thr Lys Leu Gln Ser Val Ser Ser Ala Ile His Leu Cys Asp Lys Lys	
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Lys Met Glu Leu Ser Leu Asn Ile Pro Val Asn His Gly Pro Gln Glu	
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gaa tca tgt gga tcc tct cag ctc cat gaa aat agt ggt tct cct gaa	1290
Glu Ser Cys Gly Ser Ser Gln Leu His Glu Asn Ser Gly Ser Pro Glu	
345 350 355	
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Thr Ser Arg Ser Leu Pro Ala Pro Gln Asp Asn Asp Phe Leu Ser Arg	
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Lys Ala Gln Asp Cys Tyr Phe Met Lys Leu His His Cys Pro Gly Asn	
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cac agt tgg gat agc acc att tct gga tct caa agg gct gca ttc tgt	1434
His Ser Trp Asp Ser Thr Ile Ser Gly Ser Gln Arg Ala Ala Phe Cys	
395 400 405	
gat cac aag acc att cca tgc tct tca gca ata ata aat cca ctc tca	1482
Asp His Lys Thr Ile Pro Cys Ser Ser Ala Ile Ile Asn Pro Leu Ser	
410 415 420	
act gca gga aac tca gaa cgt ctg cag cct ggt ata gcc cag cag tgg	1530
Thr Ala Gly Asn Ser Glu Arg Leu Gln Pro Gly Ile Ala Gln Gln Trp	
425 430 435	
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Ile Gln Ser Lys Arg Glu Asp Ile Val Asn Gln Met Thr Glu Ala Cys	
440 445 450 455	
ctt aac cag tcg cta gat gcc ctt ctg tcc agg gac ttg atc atg aaa	1626
Leu Asn Gln Ser Leu Asp Ala Leu Leu Ser Arg Asp Leu Ile Met Lys	
460 465 470	
gag gac tat gaa ctt gtt agt acc aag cct aca agg acc tca aaa gtc	1674
Glu Asp Tyr Glu Leu Val Ser Thr Lys Pro Thr Arg Thr Ser Lys Val	
475 480 485	
aga caa tta cta gac act act gac atc caa gga gaa gaa ttt gcc aaa	1722
Arg Gln Leu Leu Asp Thr Thr Asp Ile Gln Gly Glu Glu Phe Ala Lys	
490 495 500	
gtt ata gta caa aaa ttg aaa gat aac aaa caa atg ggt ctt cag cct	1770
Val Ile Val Gln Lys Leu Lys Asp Asn Lys Gln Met Gly Leu Gln Pro	
505 510 515	
tac ccg gaa ata ctt gtg gtt tct aga tca cca tct tta aat tta ctt	1818
Tyr Pro Glu Ile Leu Val Val Ser Arg Ser Pro Ser Leu Asn Leu Leu	
520 525 530 535	
caa aat aaa agc atg taagtgactg tttttcaaga agaaatgtgt ttcataaaag	1873
Gln Asn Lys Ser Met	

540

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1931

&lt;210&gt; 2

&lt;211&gt; 540

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2

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			20					25					30		
Ser	Ser	Ala	Arg	His	Ala	Asp	Trp	Arg	Val	Gln	Val	Ala	Val	Lys	His
		35				40						45			
Leu	His	Ile	His	Thr	Pro	Leu	Leu	Asp	Ser	Glu	Arg	Lys	Asp	Val	Leu
	50					55				60					
Arg	Glu	Ala	Glu	Ile	Leu	His	Lys	Ala	Arg	Phe	Ser	Tyr	Ile	Leu	Pro
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Ile	Leu	Gly	Ile	Cys	Asn	Glu	Pro	Glu	Phe	Leu	Gly	Ile	Val	Thr	Glu
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Tyr	Met	Pro	Asn	Gly	Ser	Leu	Asn	Glu	Leu	Leu	His	Arg	Lys	Thr	Glu
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Tyr	Pro	Asp	Val	Ala	Trp	Pro	Leu	Arg	Phe	Arg	Ile	Leu	His	Glu	Ile
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Ala	Leu	Gly	Val	Asn	Tyr	Leu	His	Asn	Met	Thr	Pro	Pro	Leu	Leu	His
	130					135				140					
His	Asp	Leu	Lys	Thr	Gln	Asn	Ile	Leu	Leu	Asp	Asn	Glu	Phe	His	Val
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Lys	Ile	Ala	Asp	Phe	Gly	Leu	Ser	Lys	Trp	Arg	Met	Met	Ser	Leu	Ser
			165						170					175	
Gln	Ser	Arg	Ser	Ser	Lys	Ser	Ala	Pro	Glu	Gly	Gly	Thr	Ile	Ile	Tyr
		180					185						190		
Met	Pro	Pro	Glu	Asn	Tyr	Glu	Pro	Gly	Gln	Lys	Ser	Arg	Ala	Ser	Ile
	195					200						205			
Lys	His	Asp	Ile	Tyr	Ser	Tyr	Ala	Val	Ile	Thr	Trp	Glu	Val	Leu	Ser
	210				215					220					
Arg	Lys	Gln	Pro	Phe	Glu	Asp	Val	Thr	Asn	Pro	Leu	Gln	Ile	Met	Tyr
225				230					235					240	
Ser	Val	Ser	Gln	Gly	His	Arg	Pro	Val	Ile	Asn	Glu	Glu	Ser	Leu	Pro
			245						250					255	
Tyr	Asp	Ile	Pro	His	Arg	Ala	Arg	Met	Ile	Ser	Leu	Ile	Glu	Ser	Gly
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Trp	Ala	Gln	Asn	Pro	Asp	Glu	Arg	Pro	Ser	Phe	Leu	Lys	Cys	Leu	Ile
	275					280						285			
Glu	Leu	Glu	Pro	Val	Leu	Arg	Thr	Phe	Glu	Glu	Ile	Thr	Phe	Leu	Glu
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Ile	His	Leu	Cys	Asp	Lys	Lys	Lys	Met	Glu	Leu	Ser	Leu	Asn	Ile	Pro
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Val	Asn	His	Gly	Pro	Gln	Glu	Glu	Ser	Cys	Gly	Ser	Ser	Gln	Leu	His
	340					345						350			
Glu	Asn	Ser	Gly	Ser	Pro	Glu	Thr	Ser	Arg	Ser	Leu	Pro	Ala	Pro	Gln
	355					360						365			
Asp	Asn	Asp	Phe	Leu	Ser	Arg	Lys	Ala	Gln	Asp	Cys	Tyr	Phe	Met	Lys

370	375	380
Leu His His Cys Pro Gly Asn His Ser Trp Asp Ser Thr Ile Ser Gly		
385	390	395
Ser Gln Arg Ala Ala Phe Cys Asp His Lys Thr Ile Pro Cys Ser Ser		400
	405	410
Ala Ile Ile Asn Pro Leu Ser Thr Ala Gly Asn Ser Glu Arg Leu Gln		415
	420	425
Pro Gly Ile Ala Gln Gln Trp Ile Gln Ser Lys Arg Glu Asp Ile Val		430
	435	440
Asn Gln Met Thr Glu Ala Cys Leu Asn Gln Ser Leu Asp Ala Leu Leu		445
	450	455
Ser Arg Asp Leu Ile Met Lys Glu Asp Tyr Glu Leu Val Ser Thr Lys		460
465	470	475
Pro Thr Arg Thr Ser Lys Val Arg Gln Leu Leu Asp Thr Thr Asp Ile		480
	485	490
Gln Gly Glu Glu Phe Ala Lys Val Ile Val Gln Lys Leu Lys Asp Asn		495
	500	505
Lys Gln Met Gly Leu Gln Pro Tyr Pro Glu Ile Leu Val Val Ser Arg		510
	515	520
Ser Pro Ser Leu Asn Leu Leu Gln Asn Lys Ser Met		525
	530	535
		540

&lt;210&gt; 3

&lt;211&gt; 1620

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 3

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ggacaaaaat	caagggccag	tatcaagcac	gatatatata	gctatgcagt	tatcacatgg	660
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tttgccaaag	ttatagtaca	aaaattgaaa	gataacaaac	aaatgggtct	tcagccttac	1560
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		20						25					30		
Ser	Ser	Ala	Arg	His	Ala	Asp	Trp	Arg	Val	Gln	Val	Ala	Val	Lys	His
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Leu	His	Ile	His	Thr	Pro	Leu	Leu	Asp	Ser	Glu	Arg	Lys	Asp	Val	Leu
	50					55				60					
Arg	Glu	Ala	Glu	Ile	Leu	His	Lys	Ala	Arg	Phe	Ser	Tyr	Ile	Leu	Pro
65					70					75					80
Ile	Leu	Gly	Ile	Cys	Asn	Glu	Pro	Glu	Phe	Leu	Gly	Ile	Val	Thr	Glu
				85					90					95	
Tyr	Met	Pro	Asn	Gly	Ser	Leu	Asn	Glu	Leu	Leu	His	Arg	Lys	Thr	Glu
			100					105					110		
Tyr	Pro	Asp	Val	Ala	Trp	Pro	Leu	Arg	Phe	Arg	Ile	Leu	His	Glu	Ile
		115					120					125			
Ala	Leu	Gly	Val	Asn	Tyr	Leu	His	Asn	Met	Thr	Pro	Pro	Leu	Leu	His
	130					135					140				
His	Asp	Leu	Lys	Thr	Gln	Asn	Ile	Leu	Leu	Asp	Asn	Glu	Phe	His	Val
145					150					155					160
Lys	Ile	Ala	Asp	Phe	Gly	Leu	Ser	Lys	Trp	Arg	Met	Met	Ser	Leu	Ser
				165					170					175	
Gln	Ser	Arg	Ser	Ser	Lys	Ser	Ala	Pro	Glu	Gly	Gly	Thr	Ile	Ile	Tyr
			180					185					190		
Met	Pro	Pro	Glu	Asn	Tyr	Glu	Pro	Gly	Gln	Lys	Ser	Arg	Ala	Ser	Ile
		195					200					205			
Lys	His	Asp	Ile	Tyr	Ser	Tyr	Ala	Val	Ile	Thr	Trp	Glu	Val	Leu	Ser
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Arg	Lys	Gln	Pro	Phe	Glu	Asp	Val	Thr	Asn	Pro	Leu	Gln	Ile	Met	Tyr
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Ser	Val	Ser	Gln	Gly	His	Arg	Pro	Val	Ile	Asn	Glu	Glu	Ser	Leu	Pro
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Tyr	Asp	Ile	Pro	His	Arg	Ala	Arg	Met	Ile	Ser	Leu	Ile	Glu	Ser	Gly
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Trp	Ala	Gln	Asn	Pro	Asp	Glu	Arg	Pro	Ser	Phe	Leu	Lys	Cys	Leu	Ile
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		20						25					30		
Leu	Asn	Ile	Pro	Val	Asn	His	Gly	Pro	Gln	Glu	Glu	Ser	Cys	Gly	Ser
	35						40					45			
Ser	Gln	Leu	His	Glu	Asn	Ser	Gly	Ser	Pro	Glu	Thr	Ser	Arg	Ser	Leu

50                      55                      60  
 Pro Ala Pro Gln Asp Asn Asp Phe Leu Ser Arg Lys Ala Gln Asp Cys  
 65                      70                      75                      80  
 Tyr Phe Met Lys Leu His His Cys Pro Gly Asn His Ser Trp Asp Ser  
                     85                      90                      95  
 Thr Ile Ser Gly Ser Gln Arg Ala Ala Phe Cys Asp His Lys Thr Ile  
                     100                      105                      110  
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                     115                      120                      125  
 Glu Arg Leu  
                     130

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 <212> PRT  
 <213> Homo sapiens

<400> 6  
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                     20                      25                      30  
 Leu Ser Arg Asp Leu Ile Met Lys Glu Asp Tyr Glu Leu Val Ser Thr  
                     35                      40                      45  
 Lys Pro Thr Arg Thr Ser Lys Val Arg Gln Leu Leu Asp Thr Thr Asp  
                     50                      55                      60  
 Ile Gln Gly Glu Glu Phe Ala Lys Val Ile Val Gln Lys Leu Lys Asp  
 65                      70                      75                      80  
 Asn Lys Gln Met Gly Leu Gln Pro Tyr Pro Glu Ile Leu Val Val Ser  
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 Arg Ser Pro Ser Leu Asn Leu Leu Gln Asn Lys Ser Met  
                     100                      105

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<220>  
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 aagggrrctgc gcagagtagc agggggccctg gagggcgcgg cctgaatcct gattgccctt                      180  
 ctgctgagag gacacacgca gctgaagatg aatttgggaa aagtagccgc ttgctacttt                      240  
 aact atg gaa gag cag ggc cac agt gag atg gaa ata atc cca tca gag                      289  
                     Met Glu Glu Gln Gly His Ser Glu Met Glu Ile Ile Pro Ser Glu  
                     1                      5                      10                      15  
 tct cac ccc cac att caa tta ctg aaa agc aat cgg gaa ctt ctg gtc                      337  
 Ser His Pro His Ile Gln Leu Leu Lys Ser Asn Arg Glu Leu Leu Val  
                     20                      25                      30  
 act cac atc cgc aat act cag tgt ctg gtg gac aac ttg ctg aag aat                      385  
 Thr His Ile Arg Asn Thr Gln Cys Leu Val Asp Asn Leu Leu Lys Asn

35	40	45	
gac tac ttc tcg gcc gaa gat gcg gag att gtg tgt gcc tgc ccc acc			433
Asp Tyr Phe Ser Ala Glu Asp Ala Glu Ile Val Cys Ala Cys Pro Thr			
50	55	60	
cag cct gac aag gtc cgc aaa att ctg gac ctg gta cag agc aag ggc			481
Gln Pro Asp Lys Val Arg Lys Ile Leu Asp Leu Val Gln Ser Lys Gly			
65	70	75	
gag gag gtg tcc gag ttc ttc ctc tac ttg ctc cag caa ctc gca gat			529
Glu Glu Val Ser Glu Phe Phe Leu Tyr Leu Leu Gln Gln Leu Ala Asp			
80	85	90	95
gcc tac gtg gac ctc agg cct tgg ctg ctg gag atc ggc ttc tcc cct			577
Ala Tyr Val Asp Leu Arg Pro Trp Leu Leu Glu Ile Gly Phe Ser Pro			
100	105	110	
tcc ctg ctc act cag agc aaa gtc gtg gtc aac act gac cca gtg agc			625
Ser Leu Leu Thr Gln Ser Lys Val Val Val Asn Thr Asp Pro Val Ser			
115	120	125	
agg tat acc cag cag ctg cga cac cat ctg ggc cgt gac tcc aag ttc			673
Arg Tyr Thr Gln Gln Leu Arg His His Leu Gly Arg Asp Ser Lys Phe			
130	135	140	
gtg ctg tgc tat gcc cag aag gag gag ctg ctg ctg gag gag atc tac			721
Val Leu Cys Tyr Ala Gln Lys Glu Glu Leu Leu Glu Glu Ile Tyr			
145	150	155	
atg gac acc atc atg gag ctg gtt ggc ttc agc aat gag agc ctg ggc			769
Met Asp Thr Ile Met Glu Leu Val Gly Phe Ser Asn Glu Ser Leu Gly			
160	165	170	175
agc ctg aac agc ctg gcc tgc ctc ctg gac cac acc acc ggc atc ctc			817
Ser Leu Asn Ser Leu Ala Cys Leu Leu Asp His Thr Thr Gly Ile Leu			
180	185	190	
aat gag cag ggt gag acc atc ttc atc ctg ggt gat gct ggg gtg ggc			865
Asn Glu Gln Gly Glu Thr Ile Phe Ile Leu Gly Asp Ala Gly Val Gly			
195	200	205	
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Lys Ser Met Leu Leu Gln Arg Leu Gln Ser Leu Trp Ala Thr Gly Arg			
210	215	220	
cta gac gca ggg gtc aaa ttc ttc ttc cac ttt cgc tgc cgc atg ttc			961
Leu Asp Ala Gly Val Lys Phe Phe Phe His Phe Arg Cys Arg Met Phe			
225	230	235	
agc tgc ttc aag gaa agt gac agg ctg tgt ctg cag gac ctg ctc ttc			1009
Ser Cys Phe Lys Glu Ser Asp Arg Leu Cys Leu Gln Asp Leu Leu Phe			
240	245	250	255
aag cac tac tgc tac cca gag cgg gac ccc gag gag gtg ttt gcc ttc			1057
Lys His Tyr Cys Tyr Pro Glu Arg Asp Pro Glu Glu Val Phe Ala Phe			
260	265	270	



ctg ctg cgc ttc ccc cac gtg gcc ctc ttc acc ttc gat ggc ctg gac	1105
Leu Leu Arg Phe Pro His Val Ala Leu Phe Thr Phe Asp Gly Leu Asp	
275 280 285	
gag ctg cac tcg gac ttg gac ctg agc cgc gtg cct gac agc tcc tgc	1153
Glu Leu His Ser Asp Leu Asp Leu Ser Arg Val Pro Asp Ser Ser Cys	
290 295 300	
ccc tgg gag cct gcc cac ccc ctg gtc ttg ctg gcc aac ctg ctc agt	1201
Pro Trp Glu Pro Ala His Pro Leu Val Leu Leu Ala Asn Leu Leu Ser	
305 310 315	
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Gly Lys Leu Leu Lys Gly Ala Ser Lys Leu Leu Thr Ala Arg Thr Gly	
320 325 330 335	
atc gag gtc ccg cgc cag ttc ctg cgg aag aag gtg ctt ctc cgg ggc	1297
Ile Glu Val Pro Arg Gln Phe Leu Arg Lys Lys Val Leu Leu Arg Gly	
340 345 350	
ttc tcc ccc agc cac ctg cgc gcc tat gcc agg agg atg ttc ccc gag	1345
Phe Ser Pro Ser His Leu Arg Ala Tyr Ala Arg Arg Met Phe Pro Glu	
355 360 365	
cgg gcc ctg cag gac cgc ctg ctg agc cag ctg gag gcc aac ccc aac	1393
Arg Ala Leu Gln Asp Arg Leu Leu Ser Gln Leu Glu Ala Asn Pro Asn	
370 375 380	
ctc tgc agc ctg tgc tct gtg ccc ctc ttc tgc tgg atc atc ttc cgg	1441
Leu Cys Ser Leu Cys Ser Val Pro Leu Phe Cys Trp Ile Ile Phe Arg	
385 390 395	
tgc ttc cag cac ttc cgt gct gcc ttt gaa ggc tca cca cag ctg ccc	1489
Cys Phe Gln His Phe Arg Ala Ala Phe Glu Gly Ser Pro Gln Leu Pro	
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gac tgc acg atg acc ctg aca gat gtc ttc ctc ctg gtc act gag gtc	1537
Asp Cys Thr Met Thr Leu Thr Asp Val Phe Leu Leu Val Thr Glu Val	
420 425 430	
cat ctg aac agg atg cag ccc agc agc ctg gtg cag cgg aac aca cgc	1585
His Leu Asn Arg Met Gln Pro Ser Ser Leu Val Gln Arg Asn Thr Arg	
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Ser Pro Val Glu Thr Leu His Ala Gly Arg Asp Thr Leu Cys Ser Leu	
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Gly Gln Val Ala His Arg Gly Met Glu Lys Ser Leu Phe Val Phe Thr	
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Gln Glu Glu Val Gln Ala Ser Gly Leu Gln Glu Arg Asp Met Gln Leu	
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Gly Phe Leu Arg Ala Leu Pro Glu Leu Gly Pro Gly Gly Asp Gln Gln	
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Ser Tyr Glu Phe Phe His Leu Thr Leu Gln Ala Phe Phe Thr Ala Phe	
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Phe Leu Val Leu Asp Asp Arg Val Gly Thr Gln Glu Leu Leu Arg Phe	
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Phe Gln Glu Trp Met Pro Pro Ala Gly Ala Ala Thr Thr Ser Cys Tyr	
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Pro Pro Phe Leu Pro Phe Gln Cys Leu Gln Gly Ser Gly Pro Ala Arg	
560 565 570 575	
gaa gac ctc ttc aag aac aag gat cac ttc cag ttc acc aac ctc ttc	2017
Glu Asp Leu Phe Lys Asn Lys Asp His Phe Gln Phe Thr Asn Leu Phe	
580 585 590	
ctg tgc ggg ctg ttg tcc aaa gcc aaa cag aaa ctc ctg cgg cat ctg	2065
Leu Cys Gly Leu Leu Ser Lys Ala Lys Gln Lys Leu Leu Arg His Leu	
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gtg ccc gcg gca gcc ctg agg aga aag cgc aag gcc ctg tgg gca cac	2113
Val Pro Ala Ala Ala Leu Arg Arg Lys Arg Lys Ala Leu Trp Ala His	
610 615 620	
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Leu Phe Ser Ser Leu Arg Gly Tyr Leu Lys Ser Leu Pro Arg Val Gln	
625 630 635	
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Val Glu Ser Phe Asn Gln Val Gln Ala Met Pro Thr Phe Ile Trp Met	
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Ala Arg Gly Ile Cys Ala Asn Tyr Leu Lys Leu Thr Tyr Cys Asn Ala	
675 680 685	
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Cys Ser Ala Asp Cys Ser Ala Leu Ser Phe Val Leu His His Phe Pro	
690 695 700	
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Lys Arg Leu Ala Leu Asp Leu Asp Asn Asn Asn Leu Asn Asp Tyr Gly	
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Ser Val Asn Gln Ile Thr Asp Gly Gly Val Lys Val Leu Ser Glu Glu	
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Leu Thr Lys Tyr Lys Ile Val Thr Tyr Leu Gly Leu Tyr Asn Asn Gln	
755 760 765	
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Ile Thr Asp Val Gly Ala Arg Tyr Val Thr Lys Ile Leu Asp Glu Cys	
770 775 780	
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Lys Gly Leu Thr His Leu Lys Leu Gly Lys Asn Lys Ile Thr Ser Glu	
785 790 795	
gga ggg aag tat ctc gcc ctg gct gtg aag aac agc aaa tca atc tct	2689
Gly Gly Lys Tyr Leu Ala Leu Ala Val Lys Asn Ser Lys Ser Ile Ser	
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Glu Val Gly Met Trp Gly Asn Gln Val Gly Asp Glu Gly Ala Lys Ala	
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ttc gca gag gct ctg cgg aac cac ccc agc ttg acc acc ctg agt ctt	2785
Phe Ala Glu Ala Leu Arg Asn His Pro Ser Leu Thr Thr Leu Ser Leu	
835 840 845	
gcg tcc aac ggc atc tcc aca gaa gga gga aag agc ctt gcg agg gcc	2833
Ala Ser Asn Gly Ile Ser Thr Glu Gly Gly Lys Ser Leu Ala Arg Ala	
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Leu Gln Gln Asn Thr Ser Leu Glu Ile Leu Trp Leu Thr Gln Asn Glu	
865 870 875	
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Leu Asn Asp Glu Val Ala Glu Ser Leu Ala Glu Met Leu Lys Val Asn	
880 885 890 895	
cag acg tta aag cat tta tgg ctt atc cag aat cag atc aca gct aag	2977
Gln Thr Leu Lys His Leu Trp Leu Ile Gln Asn Gln Ile Thr Ala Lys	
900 905 910	
ggg act gcc cag ctg gca gat gcg tta cag agc aac act ggc ata aca	3025
Gly Thr Ala Gln Leu Ala Asp Ala Leu Gln Ser Asn Thr Gly Ile Thr	
915 920 925	
gag att tgc cta aat gga aac ctg ata aaa cca gag gag gcc aaa gtc	3073
Glu Ile Cys Leu Asn Gly Asn Leu Ile Lys Pro Glu Glu Ala Lys Val	
930 935 940	
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Tyr Glu Asp Glu Lys Arg Ile Ile Cys Phe	

945

950

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&lt;210&gt; 8

&lt;211&gt; 953

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 8

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20     25     30
His Ile Arg Asn Thr Gln Cys Leu Val Asp Asn Leu Leu Lys Asn Asp
35     40     45
Tyr Phe Ser Ala Glu Asp Ala Glu Ile Val Cys Ala Cys Pro Thr Gln
50     55     60
Pro Asp Lys Val Arg Lys Ile Leu Asp Leu Val Gln Ser Lys Gly Glu
65     70     75     80
Glu Val Ser Glu Phe Phe Leu Tyr Leu Leu Gln Gln Leu Ala Asp Ala
85     90     95
Tyr Val Asp Leu Arg Pro Trp Leu Leu Glu Ile Gly Phe Ser Pro Ser
100    105    110
Leu Leu Thr Gln Ser Lys Val Val Val Asn Thr Asp Pro Val Ser Arg
115    120    125
Tyr Thr Gln Gln Leu Arg His His Leu Gly Arg Asp Ser Lys Phe Val
130    135    140
Leu Cys Tyr Ala Gln Lys Glu Glu Leu Leu Leu Glu Glu Ile Tyr Met
145    150    155    160
Asp Thr Ile Met Glu Leu Val Gly Phe Ser Asn Glu Ser Leu Gly Ser
165    170    175
Leu Asn Ser Leu Ala Cys Leu Leu Asp His Thr Thr Gly Ile Leu Asn
180    185    190
Glu Gln Gly Glu Thr Ile Phe Ile Leu Gly Asp Ala Gly Val Gly Lys
195    200    205
Ser Met Leu Leu Gln Arg Leu Gln Ser Leu Trp Ala Thr Gly Arg Leu
210    215    220
Asp Ala Gly Val Lys Phe Phe His Phe Arg Cys Arg Met Phe Ser
225    230    235    240
Cys Phe Lys Glu Ser Asp Arg Leu Cys Leu Gln Asp Leu Leu Phe Lys
245    250    255
His Tyr Cys Tyr Pro Glu Arg Asp Pro Glu Glu Val Phe Ala Phe Leu
260    265    270
Leu Arg Phe Pro His Val Ala Leu Phe Thr Phe Asp Gly Leu Asp Glu
275    280    285
Leu His Ser Asp Leu Asp Leu Ser Arg Val Pro Asp Ser Ser Cys Pro
290    295    300
Trp Glu Pro Ala His Pro Leu Val Leu Leu Ala Asn Leu Leu Ser Gly
305    310    315    320
Lys Leu Leu Lys Gly Ala Ser Lys Leu Leu Thr Ala Arg Thr Gly Ile
325    330    335
Glu Val Pro Arg Gln Phe Leu Arg Lys Lys Val Leu Leu Arg Gly Phe

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370					375					380					
Cys	Ser	Leu	Cys	Ser	Val	Pro	Leu	Phe	Cys	Trp	Ile	Ile	Phe	Arg	Cys
385	390					395					400				
Phe	Gln	His	Phe	Arg	Ala	Ala	Phe	Glu	Gly	Ser	Pro	Gln	Leu	Pro	Asp
405					410					415					
Cys	Thr	Met	Thr	Leu	Thr	Asp	Val	Phe	Leu	Leu	Val	Thr	Glu	Val	His
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465	470					475					480				
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485					490					495					
Phe	Leu	Arg	Ala	Leu	Pro	Glu	Leu	Gly	Pro	Gly	Gly	Asp	Gln	Gln	Ser
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Tyr	Glu	Phe	Phe	His	Leu	Thr	Leu	Gln	Ala	Phe	Phe	Thr	Ala	Phe	Phe
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Leu	Val	Leu	Asp	Asp	Arg	Val	Gly	Thr	Gln	Glu	Leu	Leu	Arg	Phe	Phe
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Gln	Glu	Trp	Met	Pro	Pro	Ala	Gly	Ala	Ala	Thr	Thr	Ser	Cys	Tyr	Pro
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Pro	Phe	Leu	Pro	Phe	Gln	Cys	Leu	Gln	Gly	Ser	Gly	Pro	Ala	Arg	Glu
565					570					575					
Asp	Leu	Phe	Lys	Asn	Lys	Asp	His	Phe	Gln	Phe	Thr	Asn	Leu	Phe	Leu
580					585					590					
Cys	Gly	Leu	Leu	Ser	Lys	Ala	Lys	Gln	Lys	Leu	Leu	Arg	His	Leu	Val
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Pro	Ala	Ala	Ala	Leu	Arg	Arg	Lys	Arg	Lys	Ala	Leu	Trp	Ala	His	Leu
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625	630					635					640				
Glu	Ser	Phe	Asn	Gln	Val	Gln	Ala	Met	Pro	Thr	Phe	Ile	Trp	Met	Leu
645					650					655					
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Ser	Ala	Asp	Cys	Ser	Ala	Leu	Ser	Phe	Val	Leu	His	His	Phe	Pro	Lys
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Arg	Glu	Leu	Gln	Pro	Cys	Phe	Ser	Arg	Leu	Thr	Val	Leu	Arg	Leu	Ser
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Thr	Lys	Tyr	Lys	Ile	Val	Thr	Tyr	Leu	Gly	Leu	Tyr	Asn	Asn	Gln	Ile
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<211> 2859
<212> DNA
<213> Homo sapiens
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 <211> 100  
 <212> PRT  
 <213> Homo sapiens

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20          25          30
Asn Asp Tyr Phe Ser Ala Glu Asp Ala Glu Ile Val Cys Ala Cys Pro
35          40          45
Thr Gln Pro Asp Lys Val Arg Lys Ile Leu Asp Leu Val Gln Ser Lys
50          55          60
Gly Glu Glu Val Ser Glu Phe Phe Leu Tyr Leu Leu Gln Gln Leu Ala
65          70          75          80
Asp Ala Tyr Val Asp Leu Arg Pro Trp Leu Leu Glu Ile Gly Phe Ser
85          90          95
Pro Ser Leu Leu
100

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<210> 11  
 <211> 200  
 <212> PRT  
 <213> Homo sapiens

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20          25          30
Phe Phe Phe His Phe Arg Cys Arg Met Phe Ser Cys Phe Lys Glu Ser
35          40          45
Asp Arg Leu Cys Leu Gln Asp Leu Leu Phe Lys His Tyr Cys Tyr Pro
50          55          60
Glu Arg Asp Pro Glu Glu Val Phe Ala Phe Leu Leu Arg Phe Pro His
65          70          75          80
Val Ala Leu Phe Thr Phe Asp Gly Leu Asp Glu Leu His Ser Asp Leu

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<211> 26
<212> PRT
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<213> Homo sapiens

<400> 16

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Tyr Gly Val Arg Glu Leu Gln Pro Cys Phe
          20           25
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<210> 17

<211> 27

<212> PRT

<213> Homo sapiens

<400> 17

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Gly Val Lys Val Leu Ser Glu Glu Leu Thr Lys
          20           25
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<210> 18

<211> 28

<212> PRT

<213> Homo sapiens

<400> 18

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Tyr Lys Ile Val Thr Tyr Leu Gly Leu Tyr Asn Asn Gln Ile Thr Asp
 1           5           10           15
Val Gly Ala Arg Tyr Val Thr Lys Ile Leu Asp Glu
          20           25
```

<210> 19

<211> 28

<212> PRT

<213> Homo sapiens

<400> 19

```
Cys Lys Gly Leu Thr His Leu Lys Leu Gly Lys Asn Lys Ile Thr Ser
 1           5           10           15
Glu Gly Gly Lys Tyr Leu Ala Leu Ala Val Lys Asn
          20           25
```

<210> 20

<211> 28

<212> PRT

<213> Homo sapiens

<400> 20

```
Ser Lys Ser Ile Ser Glu Val Gly Met Trp Gly Asn Gln Val Gly Asp
 1           5           10           15
Glu Gly Ala Lys Ala Phe Ala Glu Ala Leu Arg Asn
          20           25
```

<210> 21

<211> 28

<212> PRT

<213> Homo sapiens

&lt;400&gt; 21

His Pro Ser Leu Thr Thr Leu Ser Leu Ala Ser Asn Gly Ile Ser Thr  
 1 5 10 15  
 Glu Gly Gly Lys Ser Leu Ala Arg Ala Leu Gln Gln  
 20 25

&lt;210&gt; 22

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 22

Asn Thr Ser Leu Glu Ile Leu Trp Leu Thr Gln Asn Glu Leu Asn Asp  
 1 5 10 15  
 Glu Val Ala Glu Ser Leu Ala Glu Met Leu Lys Val  
 20 25

&lt;210&gt; 23

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 23

Asn Gln Thr Leu Lys His Leu Trp Leu Ile Gln Asn Gln Ile Thr Ala  
 1 5 10 15  
 Lys Gly Thr Ala Gln Leu Ala Asp Ala Leu Gln Ser  
 20 25

&lt;210&gt; 24

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 24

Asn Thr Gly Ile Thr Glu Ile Cys Leu Asn Gly Asn Leu Ile Lys Pro  
 1 5 10 15  
 Glu Glu Ala Lys Val Tyr Glu Asp Glu Lys Arg Ile  
 20 25

&lt;210&gt; 25

&lt;211&gt; 3080

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)...(1470)

&lt;400&gt; 25

cac gcg tcc gac ttg ctg aag aat gac tac ttc tcg gcc gaa gat gcg 48  
 His Ala Ser Asp Leu Leu Lys Asn Asp Tyr Phe Ser Ala Glu Asp Ala  
 1 5 10 15  
 gag att gtg tgt gcc tgc ccc acc cag cct gac aag gtc cgc aaa att 96  
 Glu Ile Val Cys Ala Cys Pro Thr Gln Pro Asp Lys Val Arg Lys Ile  
 20 25 30

ctg gac ctg gta cag agc aag ggc gag gag gtg tcc gag ttc ttc ctc Leu Asp Leu Val Gln Ser Lys Gly Glu Glu Val Ser Glu Phe Phe Leu 35 40 45	144
tac ttg ctc cag caa ctc gca gat gcc tac gtg gac ctc agg cct tgg Tyr Leu Leu Gln Gln Leu Ala Asp Ala Tyr Val Asp Leu Arg Pro Trp 50 55 60	192
ctg ctg gag atc ggc ttc tcc cct tcc ctg ctc act cag agc aaa gtc Leu Leu Glu Ile Gly Phe Ser Pro Ser Leu Leu Thr Gln Ser Lys Val 65 70 75 80	240
gtg gtc aac act gac cca gtg agc agg tat acc cag cag ctg cga cac Val Val Asn Thr Asp Pro Val Ser Arg Tyr Thr Gln Gln Leu Arg His 85 90 95	288
cat ctg ggc cgt gac tcc aag ttc gtg ctg tgc tat gcc cag aag gag His Leu Gly Arg Asp Ser Lys Phe Val Leu Cys Tyr Ala Gln Lys Glu 100 105 110	336
gag ctg ctg ctg gag gag atc tac atg gac acc atc atg gag ctg gtt Glu Leu Leu Leu Glu Glu Ile Tyr Met Asp Thr Ile Met Glu Leu Val 115 120 125	384
ggc ttc agc aat gag agc ctg ggc agc ctg aac agc ctg gcc tgc ctc Gly Phe Ser Asn Glu Ser Leu Gly Ser Leu Asn Ser Leu Ala Cys Leu 130 135 140	432
ctg gac cac acc acc ggc atc ctc aat gag cag ggt gag acc atc ttc Leu Asp His Thr Thr Gly Ile Leu Asn Glu Gln Gly Glu Thr Ile Phe 145 150 155 160	480
atc ctg ggt gat gct ggg gtg ggc aag tcc atg ctg cta cag cgg ctg Ile Leu Gly Asp Ala Gly Val Gly Lys Ser Met Leu Leu Gln Arg Leu 165 170 175	528
cag agc ctc tgg gcc acg ggc cgg cta gac gca ggg gtc aaa ttc ttc Gln Ser Leu Trp Ala Thr Gly Arg Leu Asp Ala Gly Val Lys Phe Phe 180 185 190	576
ttc cac ttt cgc tgc cgc atg ttc agc tgc ttc aag gaa agt gac agg Phe His Phe Arg Cys Arg Met Phe Ser Cys Phe Lys Glu Ser Asp Arg 195 200 205	624
ctg tgt ctg cag gac ctg ctc ttc aag cac tac tgc tac cca gag cgg Leu Cys Leu Gln Asp Leu Leu Phe Lys His Tyr Cys Tyr Pro Glu Arg 210 215 220	672
gac ccc gag gag gtg ttt gcc ttc ctg ctg cgc ttc ccc cac gtg gcc Asp Pro Glu Glu Val Phe Ala Phe Leu Leu Arg Phe Pro His Val Ala 225 230 235 240	720
ctc ttc acc ttc gat ggc ctg gac gag ctg cac tgc gac ttg gac ctg Leu Phe Thr Phe Asp Gly Leu Asp Glu Leu His Ser Asp Leu Asp Leu 245 250 255	768
agc cgc gtg cct gac agc tcc tgc ccc tgg gag cct gcc cac ccc ctg	816

Ser	Arg	Val	Pro	Asp	Ser	Ser	Cys	Pro	Trp	Glu	Pro	Ala	His	Pro	Leu	
			260					265					270			
gtc	ttg	ctg	gcc	aac	ctg	ctc	agt	ggg	aag	ctg	ctc	aag	ggg	gct	agc	864
Val	Leu	Leu	Ala	Asn	Leu	Leu	Ser	Gly	Lys	Leu	Leu	Lys	Gly	Ala	Ser	
			275					280					285			
aag	ctg	ctc	aca	gcc	cgc	aca	ggc	atc	gag	gtc	ccg	cgc	cag	ttc	ctg	912
Lys	Leu	Leu	Thr	Ala	Arg	Thr	Gly	Ile	Glu	Val	Pro	Arg	Gln	Phe	Leu	
			290					295				300				
cgg	aag	aag	gtg	ctt	ctc	cgg	ggc	ttc	tcc	ccc	agc	cac	ctg	cgc	gcc	960
Arg	Lys	Lys	Val	Leu	Leu	Arg	Gly	Phe	Ser	Pro	Ser	His	Leu	Arg	Ala	
			305				310				315				320	
tat	gcc	agg	agg	atg	ttc	ccc	gag	cgg	gcc	ctg	cag	gac	cgc	ctg	ctg	1008
Tyr	Ala	Arg	Arg	Met	Phe	Pro	Glu	Arg	Ala	Leu	Gln	Asp	Arg	Leu	Leu	
				325					330				335			
agc	cag	ctg	gag	gcc	aac	ccc	aac	ctc	tgc	agc	ctg	tgc	tct	gtg	ccc	1056
Ser	Gln	Leu	Glu	Ala	Asn	Pro	Asn	Leu	Cys	Ser	Leu	Cys	Ser	Val	Pro	
			340					345					350			
ctc	ttc	tgc	tgg	atc	atc	ttc	cgg	tgc	ttc	cag	cac	ttc	cgt	gct	gcc	1104
Leu	Phe	Cys	Trp	Ile	Ile	Phe	Arg	Cys	Phe	Gln	His	Phe	Arg	Ala	Ala	
			355					360				365				
ttt	gaa	ggc	tca	cca	cag	ctg	ccc	gac	tgc	acg	atg	acc	ctg	aca	gat	1152
Phe	Glu	Gly	Ser	Pro	Gln	Leu	Pro	Asp	Cys	Thr	Met	Thr	Leu	Thr	Asp	
			370				375					380				
gtc	ttc	ctc	ctg	gtc	act	gag	gtc	cat	ctg	aac	agg	atg	cag	ccc	agc	1200
Val	Phe	Leu	Leu	Val	Thr	Glu	Val	His	Leu	Asn	Arg	Met	Gln	Pro	Ser	
			385			390				395				400		
agc	ctg	gtg	cag	cgg	aac	aca	cgc	agc	cca	gtg	gag	acc	ctc	cac	gcc	1248
Ser	Leu	Val	Gln	Arg	Asn	Thr	Arg	Ser	Pro	Val	Glu	Thr	Leu	His	Ala	
				405					410				415			
ggc	cgg	gac	act	ctg	tgc	tgc	ctg	ggg	cag	gtg	gcc	cac	cgg	ggc	atg	1296
Gly	Arg	Asp	Thr	Leu	Cys	Ser	Leu	Gly	Gln	Val	Ala	His	Arg	Gly	Met	
			420					425					430			
gag	aag	agc	ctc	ttt	gtc	ttc	acc	cag	gag	gag	gtg	cag	gcc	tcc	ggg	1344
Glu	Lys	Ser	Leu	Phe	Val	Phe	Thr	Gln	Glu	Glu	Val	Gln	Ala	Ser	Gly	
			435					440				445				
ctg	cag	gag	aga	gac	atg	cag	ctg	ggc	ttc	ctg	cgg	gct	ttg	ccg	gag	1392
Leu	Gln	Glu	Arg	Asp	Met	Gln	Leu	Gly	Phe	Leu	Arg	Ala	Leu	Pro	Glu	
			450			455					460					
ctg	ggc	ccc	ggg	ggt	gac	cag	cag	tcc	tat	gag	ttt	ttc	cac	ctc	agc	1440
Leu	Gly	Pro	Gly	Gly	Asp	Gln	Gln	Ser	Tyr	Glu	Phe	Phe	His	Leu	Ser	
			465			470				475				480		
ctc	ctc	acc	tgt	aaa	act	ggg	atc	cca	gta	tagacttttg	aaatcagtag					1490
Leu	Leu	Thr	Cys	Lys	Thr	Gly	Ile	Pro	Val							

485

490

```

acaccatattg cttcaaaaaa caggggctat taaaatgaca tcaggagcca gaaagtctca 1550
tggtgtgtgct ttctcttgaa gtttatacaa caaccagatc accgatgtcg gagccagact 1610
gggaaaaaac aaaataacaa gtgaaggagg gaagtatctc gccctggctg tgaagaacag 1670
caaatcaatc tctgaggttg ggatgtgggg caatcaagtt ggggatgaag gagcaaaagc 1730
cttcgcagag gctctgcgga accaccccag cttgaccacc ctgagtcttg cgtccaacgg 1790
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aatactgtgg ctgacccaaa atgaactcaa cgatgaagtg gcagagagtt tggcagaaat 1910
gttgaaagtc aaccagacgt taaagcattt atggcttatc cagaatcaga tcacagtctt 1970
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gagttggtca ccgctctttt cattgaagag ttgaggatgt ggcacaaagt tggtgccaag 2330
cttcttgaat aaaacgtgtt tgatggatta gtattatacc tgaaatattt tcttccttct 2390
cagcactttc ccatgtattg atactgggtcc cacttcacag ctggagacac cggagtatgt 2450
gcagtgtggg atttgactcc tccaagggtt tgtggaaagt taatgtcaag gaaaggatgc 2510
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ccctcagctc ttagctggtc taagaatgac gatgccttca aaatgctgct tccactcagg 2630
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ccctggcatc caaatggctg cttttgtctc ccttacctcg tgaagagggg aagtctcttc 2810
ctgctccca agcagctgaa ggggtgactaa acgggcgcca agactcaggg gatcggctgg 2870
gaactgggccc agcagagcat gttggacacc cccaccatg gtgggcttgt ggtggctgct 2930
ccatgagggg ggggggtgata ctactagatc acttgtcctc ttgccagctc atttgtaaat 2990
aaaataactga aaacacaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3050
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3080

```

&lt;210&gt; 26

&lt;211&gt; 490

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 26

```

His Ala Ser Asp Leu Leu Lys Asn Asp Tyr Phe Ser Ala Glu Asp Ala
 1           5           10          15
Glu Ile Val Cys Ala Cys Pro Thr Gln Pro Asp Lys Val Arg Lys Ile
          20          25          30
Leu Asp Leu Val Gln Ser Lys Gly Glu Glu Val Ser Glu Phe Phe Leu
          35          40          45
Tyr Leu Leu Gln Gln Leu Ala Asp Ala Tyr Val Asp Leu Arg Pro Trp
          50          55          60
Leu Leu Glu Ile Gly Phe Ser Pro Ser Leu Leu Thr Gln Ser Lys Val
65          70          75          80
Val Val Asn Thr Asp Pro Val Ser Arg Tyr Thr Gln Gln Leu Arg His
          85          90          95
His Leu Gly Arg Asp Ser Lys Phe Val Leu Cys Tyr Ala Gln Lys Glu
          100         105         110
Glu Leu Leu Leu Glu Glu Ile Tyr Met Asp Thr Ile Met Glu Leu Val
          115         120         125
Gly Phe Ser Asn Glu Ser Leu Gly Ser Leu Asn Ser Leu Ala Cys Leu
          130         135         140
Leu Asp His Thr Thr Gly Ile Leu Asn Glu Gln Gly Glu Thr Ile Phe
145         150         155         160
Ile Leu Gly Asp Ala Gly Val Gly Lys Ser Met Leu Leu Gln Arg Leu

```

165 170 175  
 Gln Ser Leu Trp Ala Thr Gly Arg Leu Asp Ala Gly Val Lys Phe Phe  
 180 185 190  
 Phe His Phe Arg Cys Arg Met Phe Ser Cys Phe Lys Glu Ser Asp Arg  
 195 200 205  
 Leu Cys Leu Gln Asp Leu Leu Phe Lys His Tyr Cys Tyr Pro Glu Arg  
 210 215 220  
 Asp Pro Glu Glu Val Phe Ala Phe Leu Leu Arg Phe Pro His Val Ala  
 225 230 235 240  
 Leu Phe Thr Phe Asp Gly Leu Asp Glu Leu His Ser Asp Leu Asp Leu  
 245 250 255  
 Ser Arg Val Pro Asp Ser Ser Cys Pro Trp Glu Pro Ala His Pro Leu  
 260 265 270  
 Val Leu Leu Ala Asn Leu Leu Ser Gly Lys Leu Leu Lys Gly Ala Ser  
 275 280 285  
 Lys Leu Leu Thr Ala Arg Thr Gly Ile Glu Val Pro Arg Gln Phe Leu  
 290 295 300  
 Arg Lys Lys Val Leu Leu Arg Gly Phe Ser Pro Ser His Leu Arg Ala  
 305 310 315 320  
 Tyr Ala Arg Arg Met Phe Pro Glu Arg Ala Leu Gln Asp Arg Leu Leu  
 325 330 335  
 Ser Gln Leu Glu Ala Asn Pro Asn Leu Cys Ser Leu Cys Ser Val Pro  
 340 345 350  
 Leu Phe Cys Trp Ile Ile Phe Arg Cys Phe Gln His Phe Arg Ala Ala  
 355 360 365  
 Phe Glu Gly Ser Pro Gln Leu Pro Asp Cys Thr Met Thr Leu Thr Asp  
 370 375 380  
 Val Phe Leu Leu Val Thr Glu Val His Leu Asn Arg Met Gln Pro Ser  
 385 390 395 400  
 Ser Leu Val Gln Arg Asn Thr Arg Ser Pro Val Glu Thr Leu His Ala  
 405 410 415  
 Gly Arg Asp Thr Leu Cys Ser Leu Gly Gln Val Ala His Arg Gly Met  
 420 425 430  
 Glu Lys Ser Leu Phe Val Phe Thr Gln Glu Glu Val Gln Ala Ser Gly  
 435 440 445  
 Leu Gln Glu Arg Asp Met Gln Leu Gly Phe Leu Arg Ala Leu Pro Glu  
 450 455 460  
 Leu Gly Pro Gly Gly Asp Gln Gln Ser Tyr Glu Phe Phe His Leu Ser  
 465 470 475 480  
 Leu Leu Thr Cys Lys Thr Gly Ile Pro Val  
 485 490

&lt;210&gt; 27

&lt;211&gt; 1470

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 27

cacgcgtccg	acttgctgaa	gaatgactac	ttctcggccg	aagatgcgga	gattgtgtgt	60
gcctgcccc	cccagcctga	caagggtccgc	aaaattctgg	acctggtaca	gagcaagggc	120
gaggaggtgt	ccgagttctt	cctctacttg	ctccagcaac	tcgcagatgc	ctacgtggac	180
ctcaggcctt	ggctgctgga	gatcggtctt	tcccttccc	tgtctactca	gagcaaagtc	240
gtgggtcaaca	ctgacccagt	gagcaggtat	accagcagc	tgcgacacca	tctgggcccgt	300
gactccaagt	tcgtgctgtg	ctatgcccag	aaggaggagc	tgctgctgga	ggagatctac	360
atggacacca	tcatggagct	ggttggcttc	agcaatgaga	gcctgggcag	cctgaacagc	420
ctggcctgcc	tctggacca	caccaccggc	atcctcaatg	agcagggtga	gaccatcttc	480
atcctgggtg	atgctggggt	gggcaagtcc	atgctgctac	agcggctgca	gagcctctgg	540

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gccacggggcc ggctagacgc aggggtcaaa ttcttcttcc actttcgctg ccgcatgttc 600
agctgcttca aggaaagtga caggctgtgt ctgcaggacc tgctcttcaa gcactactgc 660
taccagagc gggacccga ggaggtgtt gccttcctgc tgcgcttccc ccacgtggcc 720
ctcttcacct tcgatggcct ggacgagctg cactcggact tggacctgag ccgctgcct 780
gacagctcct gcccctggga gcctgcccac cccctggtct tgctggccaa cctgctcagt 840
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cgccagttcc tgcggaagaa ggtgcttctc cggggcttct cccccagcca cctgcgcgcc 960
tatgccagga ggatgttccc cgagcggggc ctgcaggacc gcctgctgag ccagctggag 1020
gccaacccca acctctgcag cctgtgctct gtgcccctct tctgctggat catcttcgg 1080
tgcttcacgc acttcctgctg tgcctttgaa ggctcaccac agctgcccga ctgcacgatg 1140
accctgacag atgtcttctt cctggtcact gaggtccatc tgaacaggat gcagcccagc 1200
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ctgtgctcgc tggggcaggt ggcccaccgg ggcattggaga agagcctctt tgtcttcacc 1320
caggaggagg tgcaggctc cgggctgcag gagagagaca tgcagctggg cttcctgcgg 1380
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ctctcacct gtaaaactgg gatcccagta 1470

```

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<210> 28
<211> 74
<212> PRT
<213> Homo sapiens

```

```

<400> 28
His Ala Ser Asp Leu Leu Lys Asn Asp Tyr Phe Ser Ala Glu Asp Ala
 1             5             10             15
Glu Ile Val Cys Ala Cys Pro Thr Gln Pro Asp Lys Val Arg Lys Ile
          20             25             30
Leu Asp Leu Val Gln Ser Lys Gly Glu Glu Val Ser Glu Phe Phe Leu
      35             40             45
Tyr Leu Leu Gln Gln Leu Ala Asp Ala Tyr Val Asp Leu Arg Pro Trp
      50             55             60
Leu Leu Glu Ile Gly Phe Ser Pro Ser Leu
65             70

```

```

<210> 29
<211> 8
<212> PRT
<213> Homo sapiens

```

```

<400> 29
Gly Asp Ala Gly Val Gly Lys Ser
 1             5

```

```

<210> 30
<211> 5
<212> PRT
<213> Homo sapiens

```

```

<400> 30
Leu Phe Thr Phe Asp
 1             5

```

```

<210> 31
<211> 94
<212> PRT
<213> Homo sapiens

```

&lt;400&gt; 31

Ala	Gln	Glu	Arg	Pro	Ser	Glu	Thr	Thr	Asp	Arg	Glu	Arg	Lys	Arg	Leu
1				5					10				15		
Val	Glu	Thr	Leu	Gln	Ala	Asp	Ser	Gly	Leu	Leu	Leu	Asp	Ala	Leu	Leu
			20					25				30			
Ala	Arg	Gly	Val	Leu	Thr	Gly	Pro	Glu	Tyr	Glu	Ala	Leu	Asp	Ala	Leu
		35				40					45				
Pro	Asp	Ala	Glu	Arg	Arg	Val	Arg	Arg	Leu	Leu	Leu	Leu	Val	Gln	Gly
	50					55					60				
Lys	Gly	Glu	Ala	Ala	Cys	Gln	Glu	Leu	Leu	Arg	Cys	Ala	Gln	Arg	Thr
65					70					75				80	
Ala	Gly	Ala	Pro	Asp	Pro	Ala	Trp	Asp	Trp	Gln	His	Val	Gly		
				85				90							

&lt;210&gt; 32

&lt;211&gt; 89

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 32

Met	Ala	Ser	Asp	Asp	Leu	Ser	Leu	Ile	Arg	Lys	Asn	Arg	Met	Ala	Leu
1				5					10				15		
Phe	Gln	Gln	Leu	Thr	Cys	Val	Leu	Pro	Ile	Leu	Asp	Asn	Leu	Leu	Lys
			20					25				30			
Ala	Asn	Val	Thr	Asn	Lys	Gln	Glu	His	Asp	Ile	Ile	Lys	Gln	Lys	Thr
		35				40					45				
Gln	Ile	Pro	Leu	Gln	Ala	Arg	Glu	Leu	Ile	Asp	Thr	Ile	Trp	Val	Lys
	50					55				60					
Gly	Asn	Ala	Ala	Ala	Asn	Ile	Phe	Lys	Asn	Cys	Leu	Lys	Glu	Ile	Asp
65					70					75				80	
Ser	Thr	Leu	Tyr	Lys	Asn	Leu	Phe	Val							
				85											

&lt;210&gt; 33

&lt;211&gt; 89

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 33

Lys	Glu	Ser	Asn	Asp	Leu	Leu	Leu	Ile	Arg	Lys	Asn	Arg	Met	Ala	Leu
1				5					10				15		
Phe	Gln	His	Leu	Thr	Cys	Val	Ile	Pro	Ile	Leu	Asp	Ser	Leu	Leu	Thr
			20					25				30			
Ala	Gly	Ile	Ile	Asn	Glu	Gln	Glu	His	Asp	Val	Ile	Lys	Gln	Lys	Thr
		35				40					45				
Gln	Thr	Ser	Leu	Gln	Ala	Arg	Glu	Leu	Ile	Asp	Thr	Ile	Leu	Val	Lys
	50					55				60					
Gly	Asn	Ile	Ala	Ala	Thr	Val	Phe	Arg	Asn	Ser	Leu	Gln	Glu	Ala	Glu
65					70					75				80	
Ala	Val	Leu	Tyr	Glu	His	Leu	Phe	Val							
				85											

&lt;210&gt; 34

&lt;211&gt; 24

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens



<400> 34  
ccctggtact tgccccctccg gtag

24

<210> 35  
<211> 18  
<212> DNA  
<213> Homo sapiens

<400> 35  
cctggtactt gccccctcc

18

<210> 36  
<211> 23  
<212> DNA  
<213> Homo sapiens

<400> 36  
tcgttaagcc cttgaagaca gtg

23

<210> 37  
<211> 30  
<212> DNA  
<213> Homo sapiens

<400> 37  
tcgttagccc ttgaagacca gtgagtgtag

30

ccctggtact tgccccctccg gtag